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10/552,165	11/17/2006	Udo Steffl	32128-224279	2034

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WASHINGTON, DC 20043-9998

EXAMINER
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AUGHENBAUGH, WALTER

ART UNIT	PAPER NUMBER
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1782

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08/31/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/552,165	<b>Applicant(s)</b> STEFFL ET AL.	
	<b>Examiner</b> WALTER B. AUGHENBAUGH	<b>Art Unit</b> 1782	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/11/05, 6/8/06, 11/17/06</u> . | 6) <input type="checkbox"/> Other: ____.  |

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## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I, claims 1-17 and 19 in the reply filed on June 23, 2010 is acknowledged.

### ***Specification***

2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

The abstract could not be located in the IFW file. Please provide an abstract or provide guidance as to where the abstract is in the IFW file.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-17 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to sole independent claim 1, the scope of compositions that Applicant intends to delineate by the recitation "which are made according to the single-stage process" cannot be ascertained, and it cannot be ascertained whether or not Applicant intends to delineate any metes and bounds of the compositions that fall within the claim language by this recitation.

It is unclear to which "single-stage process" claim 1 refers (claim 1 recites "... the single-stage process..."). Applicant's specification refers to what appears to be a few different "single-

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stage” processes (see paragraph 0006, 0007, 0030). Paragraph 0007 states “... a single-stage silane process...”, suggesting that there are more than one single-stage silane processes. Based on the description of these “single-stage” processes in the respective paragraphs, these processes involve different requirements (see paragraph 0006 [concerning the mixing of “additives”], 0007, 0030 [concerning the “shaping” of the article]). Which of the “single-stage” processes described in Applicant’s specification does Applicant intend to refer to in claim 1 by the recitation “the single-stage process”? What are the requirements of “the single-stage process” that Applicant intends to recite via the recitation “the single-stage process” in claim 1 ?

Furthermore, what are the required compounds for the production of the crosslinked polyethylene via “the single-stage process” ? It cannot be ascertained what compounds are required for production of the crosslinked polyethylene recited in claim 1 due to the different descriptions of single-stage processes in the specification as identified above.

Dependent claims 2-17 and 19 are rejected for the same reasons as discussed above in regard to claim 1 (although the compounds that are required for production of the crosslinked polyethylene are recited in claims 2-17 and 19).

Claim 2 recites the limitation "the polyolefin composition" in line 2. There is insufficient antecedent basis for this limitation in the claim. Furthermore, is "the polyolefin composition" recited in claim 2 the composition of the final product, or of an intermediate in the formation of the final crosslinked composition? Does the final product include all of the components recited in claim 2 (as is suggested by the claim language) ?

In further regard to claim 2, and also in further regard to claim 10, it is unclear what scope of compositions Applicant intends to recite by the claim term “high melting point, high-

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molecular phenolic constituent (C1)” in claim 2. Examiner notes that the claim term “high melting point, high-molecular phenolic constituent (C1)” is defined in Applicant’s specification in paragraph 0022, which provides a list of compounds that the “high melting point, high-molecular phenolic constituent” is chosen from (...is selected from the group of...). Claim 10 recites the same list of compounds listed in paragraph 0022. The fact that claim 10, which depends upon claim 2, recites this list, suggests that the claim term “high melting point, high-molecular phenolic constituent (C1)” in claim 2 is intended to include a list of compounds that lists more compounds than those listed in claim 10 (and paragraph 0022). If this is the case, the scope of compositions Applicant intends to recite by the claim term “high melting point, high-molecular phenolic constituent (C1)” cannot be ascertained because both terms “high melting point” and “high-molecular” are relative terms which are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degrees, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The scope of the recitation is clear if the compounds that fall within the scope of the claim term “high melting point, high-molecular phenolic constituent” is limited to those listed in paragraph 0022 and recited in claim 10, but it is not clear if this is intended to be the case since the compounds listed in paragraph 0022 are recited in a claim that is dependent on claim 2 (as opposed to in claim 2).

In further regard to claim 2, and also in further regard to claim 14, it appears that “(B1)” should be removed from the location that it is currently and placed in the text to the right of its current location. Note how “(C1)” is in the text to the right of “(C)”. It appears that “(B1)” should be in the text to the right of “(B)”, just as “(C1)” is in the text to the right of “(C)”. This

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would also make it clear that components B1, B2 and B3 are all components of “mixture” B in the weight of B recited in claim 14, which is not necessarily clear as the language currently stands (as long as this is Applicant intends to recite). In claim 15, it is clear that mixture C includes components C1, C2, C3 and C4, but it is not clear what components are included in mixture B as the language currently stands.

In further regard to claim 4, it cannot be ascertained what “RSiX<sub>3</sub>(B1)” in line 2 is intended to recite. Clarification and/or correction is required.

In further regard to claim 5, it cannot be ascertained what “particularly” (line 5) is intended to recite. Is “particularly” intended to require that B2 be an alkylperoxide ? It is unclear why the other types of compound are recited if this were the case. Clarification and/or correction is required.

Claim 8 recites the limitation "the organic alkylperoxide" in line 2. There is insufficient antecedent basis for this limitation in the claim.

In further regard to claim 14, it cannot be ascertained what “particularly” (line 3) is intended to recite. Is “particularly” intended to require that the range be “between 1 and 3 parts”? It is unclear why the other range is recited if this were the case. Clarification and/or correction is required.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 1, 17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Stachowiak (USPN 6,361,842).

In regard to claims 1, 17 and 19, Stachowiak teaches silane-crosslinked polyolefin tubes which have a minimum crosslinking degree of 65 % (see, for example, col. 8, lines 11-25 and col. 3, lines 43-51).

The recitation “which are intended for drinking water and/or water for industrial use” is an intended use phrase that has been given little patentable weight, since it has been held that a recitation with respect to the manner in which a claimed article is intended to be employed does not differentiate the claimed article from a prior art article satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQd 1647 (1987).

Since Stachowiak teaches an article having the structural and compositional characteristics that are positively recited in claim 1, the skilled artisan would expect the inherent physical characteristics such as resistance to chlorine to be the same, as well, since there is nothing otherwise recited that would lead to a different result.

The recitation “which are made according to the single-stage process” is a method limitation that has been given little patentable weight since the method of forming the article is not germane to the issue of patentability of the article itself. The structural and compositional characteristics recited in Applicant’s claim 1 is met by the article of Stachowiak.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
8. Claims 2-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stachowiak (USPN 6,361,842) in view of Yui et al. (USPN 4,244,910), as evidenced by Paul et al. (USPN 6,894,101).

In regard to claims 2 and 10, Stachowiak teaches the tubes as claimed as discussed above in regard to claim 1. Stachowiak teaches that the composition of the tubes is formed from a mixture of polyolefin, silane of the claimed general formula (the formula recited is the general formula for silanes), a radical-generating constituent, a catalyst and a stabilizer (col. 4, lines 9-23).

Stachowiak fails to specifically teach that the stabilizer is a mixture of the four recited constituents.

Examiner notes that the claim term “high melting point, high-molecular phenolic constituent (C1)” is defined in Applicant’s specification in paragraph 0022, which provides a list of compounds that the “high melting point, high-molecular phenolic constituent” is chosen from (...is selected from the group of...”).



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Yui et al. disclose a polyolefin composition that may include a mixture of (col. 3, lines 52-53) phenolic antioxidants, sulfur-type antioxidants, phosphorus-type antioxidants and a metal deactivator (col. 3, lines 25-53). The mixture of antioxidants is a stabilizer package, as evidenced by col. 6, lines 5-11 of Yui et al. (the compounds identified as stabilizers at col. 6, lines 5-11 are also listed as antioxidants at col. 3, lines 25-34) and as also evidenced by USPN 6,894,101 to Paul et al. at col. 4, line 1-5, which identifies a mixture that includes phenolic antioxidant, sulfur or phosphorus antioxidant and metal deactivator as a “stabilizer system”. The 1,1,3-tri-(2-methyl-4-hydroxy-5-butylphenyl)butane phenolic antioxidant disclosed by Yui et al. (col. 3, line 29) is also listed in the list of phenolic compounds that are “high melting point, high-molecular phenolic” constituents in paragraph 0022 of Applicant’s invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a mixture of phenolic antioxidants such as 1,1,3-tri-(2-methyl-4-hydroxy-5-butylphenyl)butane, sulfur-type antioxidants, phosphorus-type antioxidants and a metal deactivator (col. 3, lines 25-53) as the stabilizer of the polyolefin composition of Stachowiak, since a mixture of phenolic antioxidants such as 1,1,3-tri-(2-methyl-4-hydroxy-5-butylphenyl)butane, sulfur-type antioxidants, phosphorus-type antioxidants and a metal deactivator is are well known additives / stabilizers for polyolefin compositions as taught by Yui et al.

Since Stachowiak and Yui et al. teach tubes having the structural and compositional characteristics that are positively recited in claim 2, the tube taught by Stachowiak and Yui et al. has the resistance to chlorine recited in claim 1.

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Claims 3, 4, 8, 9, 12 and 13 recite particular materials for the components recited in claim 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected a particular material for each of the components recited in claims 3, 4, 8, 9, 12 and 13 in order to achieve the desired properties of the tubes depending on the particular desired end result/s. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945); *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) (selection of a known plastic to make a container of a type made of plastics prior to the invention was held to be obvious); MPEP 2144.07.

In regard to claims 5 and 7, Stachowiak teaches alkylperoxide as a suitable compound for the radical-generating constituent (col. 4, lines 9-23). In further regard to claim 7, since Stachowiak teaches alkylperoxide as a suitable compound for the radical-generating constituent (col. 4, lines 9-23), the skilled artisan would expect the inherent physical characteristics such as half-value time to be the same, as well, since there is nothing otherwise recited that would lead to a different result.

In regard to claim 6, Stachowiak teaches an azo compound as a suitable compound for the radical-generating constituent (col. 6, lines 31-37).

In regard to claim 11, Yui et al. disclose dilauryl thiodipropionate as a suitable sulfur stabilizer (col. 3, lines 32-35, col. 6, lines 5-11, and discussion in regard to claim 2 in regard to usage of antioxidants as stabilizers as evidenced by Yui et al. and Paul et al.). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used dilauryl thiodipropionate as the sulfur stabilizer of the stabilizer package taught by Yui et

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al. of the tubes taught by Stachowiak and Yui et al. since dilauryl thiodipropionate is a suitable sulfur stabilizer for polyolefin compositions as taught by Yui et al.

In regard to claims 14 and 15, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have varied the relative amounts of the components of mixture B relative to the components of mixture A, and the relative amounts of the components of mixture C relative to the components of mixture A, in order to achieve the desired degree of crosslinking and other properties of the final product such as mechanical properties depending upon the desired end result since the components of mixtures B and C cause the crosslinking of the polyolefin chains (see, for example, col. 4, lines 9-16 of Stachowiak). It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). MPEP 2144.05 II.B.

In regard to claim 16, Yui et al. teach that other additives such as ultraviolet absorbers and antistatic agents may be included in the mixture of additives for the the polyolefin compositions (col. 3, lines 25-54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included an ultraviolet absorber and /or antistatic agent in the mixture of additives taught by Yui et al. of the tubes taught by Stachowiak and Yui et al. since ultraviolet absorbers and antistatic agents are well known standard additives for polyolefin compositions as taught by Yui et al. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have varied the amount of the ultraviolet absorber and /or

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antistatic agent in order to achieve the desired effect of the particular additive while also minimizing the amount of additives used for economical reasons.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is (571) 272-1488. The examiner can normally be reached on Monday-Thursday from 9:00am to 7:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Walter B Aughenbaugh /  
Examiner, Art Unit 1782

8/28/10